Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What we claim is:

1. (Currently Amended) Flat storage element for an X-ray image, with a large number of storage particles ~~(20)~~ which may be placed by means of X-ray light in metastable excitation states that are convertible by irradiation with activating light into an unstable excitation state which is in turn decomposed with the radiation of fluorescent light, and with a transparent binding agent ~~(22)~~ by means of which the storage particles ~~(20)~~ are held together to form a storage layer ~~(12)~~, wherein the binding agent ~~(22)~~ and the storage particles ~~(20)~~ have substantially the same refractive index and the binding agent is crystal_clear, wherein the storage particles ~~(20)~~ consist of a transparent salt material which comprises two salts chemically different but crystallizing in the same crystal structure, wherein the salts form a mixed crystal, the storage element further comprising that the refractive indices of the storage particles ~~(20)~~ and the binding agent ~~(22)~~ are isotropic.

2. (Original) Storage element according to claim 1, wherein the salts differ in at least one of their cations and anions.

3. (Original) Storage element according to claim 2, wherein the cations are halide ions.

4. (Currently Amended) Storage element according to claim 1, wherein the binding agent ~~(22)~~ is a transparent plastics material with a refractive index of between 1.4 and about 1.6.

5. (Cancelled).

6. (Currently Amended) Storage element according to claim 1, further comprising an anti-reflection coating ~~(14)~~ borne by the front surface of the storage layer ~~(12)~~.

7. (Currently Amended) Storage element according to claim 1, wherein the rear side of the storage layer ~~(12)~~ bears an absorbing layer ~~(16)~~ which absorbs the activating light.

8. (Currently Amended) Storage element according to claim 1, wherein a reflecting layer ~~(16)~~ is provided on the rear side of the storage layer ~~(12)~~, which reflects the fluorescent light and is connected firmly to the storage layer ~~(12)~~.

9. (Currently Amended) Storage element according to claim 1, wherein a protective layer of material absorbing X-ray beams is arranged behind the storage layer ~~(12)~~, the protective layer comprising a metal layer consisting of a metal with high order number such as lead.

10. (Currently Amended) Storage element according to claim 9, wherein the protective layer ~~(18)~~ is connected firmly to the storage layer ~~(12)~~ by an adhesive layer ~~(16)~~ that absorbs the activating light.

11. (Currently Amended) Storage element according to claim 1, wherein at least one of the storage layer ~~(12)~~, the anti-reflection coating ~~(14)~~, the absorbing layer ~~(16)~~, the reflecting layer, ~~(16)~~ and the protective layer ~~(18)~~ form a bendable layered structure.

12. (Currently Presented) Method for producing a storage element according to claim 1, wherein the binding agent ~~(22)~~ is prepared in the highly liquid state through heating, and the storage particles ~~(20)~~ are dispersed in the liquid binding agent ~~(22)~~, wherein the material obtained in this way is dispersed to form a thin film-type layer and the binding agent is then cured.

13. (Cancelled)

14. (Previously Presented) The storage element according to claim 1, wherein the crystal clear binding agent is chosen from the group consisting of EIFE, MF resin, EP resin, crowns, flints, rigid PVC, PS, SAN, PA6, PA66, PA11, Pa12, and PC.

15. (Previously Presented) A method for producing a storage element for an X-ray image with a large number of transparent storage particles which may be placed by means of X-ray light in metastable excitation states that are convertible by irradiation with activating light into an unstable excitation state which is in turn decomposed with the radiation of fluorescent light, and with at transparent binding agent by means of which the storage particles are held together to form a storage layer, wherein the binding agent and the storage particles both have substantially the same refractive index, are both crystal clear and are both optically isotropic, and wherein the refractive index of the binding agent is measured and wherein two salts, which are chemically different but crystallize in the same crystal structure are selected, one of which having a refractive index lower than the refractive index of the binding agent and the other having a refractive index above the refractive index of the binding agent and the two salts are mixed in a proportion such that the refractive index of the

mixed crystals obtained form the two salts matches the refractive index of the binding agent.

16. (Cancelled)

17. (Previously Presented) The method according to claim 15, wherein the binding agent is taken from the group consisting of EIFE, MF resin, EP resin, crowns, flints, rigid PVC, PS, SAN, PMMA, PA6, PA66, PA11, PA12, and PC.

18. (Previously Presented) The method as in claim 15, wherein the salts differ in their cations.

19. (Previously Presented) The method as in claim 15, wherein the salts differ in their anions.

20. (Previously Presented) The method as in claim 15, wherein the salts differ in their cations and anions.

21. (Currently Amended) Flat storage element for an X-ray image, with a large number of storage particles ~~(20)~~ which may be placed by means of X-ray light in metastable excitation states that are convertible by irradiation with activating light into an unstable excitation state which is in turn decomposed with the radiation of fluorescent light, and with a transparent binding agent ~~(22)~~ by means of which the storage particles ~~(20)~~ are held together to form a storage layer ~~(12)~~, wherein the binding agent ~~(22)~~ and the storage particles ~~(20)~~ have substantially the same refractive index, are crystal clear, and are optically isotropic, wherein the storage particles ~~(20)~~ consist of a transparent salt material which comprises two salts chemically different but crystallizing in the same crystal

structure, wherein the salts form a mixed crystal.

22. (Previously Presented) Storage element according to claim 21, wherein the salts differ in at least one of their cations and anions.

23. (Previously Presented) Storage element according to claim 22, wherein the cations are halide ions.

24. (Currently Amended) Storage element according to claim 21, wherein the binding agent ~~(22)~~ is a transparent plastics material with a refractive index of between 1.4 and about 1.6.

25. (Cancelled)

26. (Currently Amended) Storage element according to claim 21, further comprising an anti-reflection coating ~~(14)~~ borne by the front surface of the storage layer ~~(12)~~.

27. (Currently Amended) Storage element according to claim 21, wherein the rear side of the storage layer ~~(12)~~ bears an absorbing layer ~~(16)~~ which absorbs the activating light.

28. (Currently Amended) Storage element according to claim 21, wherein a reflecting layer ~~(16)~~ is provided on the rear side of the storage layer ~~(12)~~, which reflects the fluorescent light and is connected firmly to the storage layer ~~(12)~~.

29. (Currently Amended) Storage element according to claim 21, wherein a protective layer of material absorbing X-ray beams is arranged behind the storage layer ~~(12)~~, the protective layer comprising a metal layer consisting of a metal with high order number such as lead.

30. (Currently Amended) Storage element according to claim 29, wherein the protective layer

~~(18)~~ is connected firmly to the storage layer ~~(12)~~ by an adhesive layer ~~(16)~~ that absorbs the activating light.

31. (Currently Amended) Storage element according to claim 21, wherein at least one of the storage layer ~~(12)~~, the anti-reflection coating ~~(14)~~, the absorbing layer ~~(16)~~, the reflecting layer, ~~(16)~~ and the protective layer ~~(18)~~ form a bendable layered structure.

32. (Currently Amended) Method for producing a storage element according to claim 21, wherein the binding agent ~~(22)~~ is prepared in the liquid state and the storage particles ~~(20)~~ are dispersed in the liquid binding agent ~~(22)~~, and that the material obtained in this way is dispersed to form a thin film-type layer and the binding agent is then cured.

33. (Currently Amended) Method according to claim 32, wherein the binding agent ~~(22)~~ is prepared in the highly liquid state, to which end it is at least one of diluted and heated.

34. (Previously Presented) The storage element according to claim 21, wherein the crystal clear binding agent is chosen from the group consisting of EIFE, MF resin, EP resin, crowns, flints, rigid PVC, PS, SAN, PMMA, PA6, PA66, PA11, PA12, and PC.

35. (Currently Amended) The storage element according to claim 1~~5~~, wherein the two salts comprise one salt from Group I of the Periodic Table, and another salt from Group VII of the Periodic Table.

36. (Previously presented)A flat storage element for an x-ray image, the element comprising:

- a plurality of storage particles capable of excitation to a metastable excitation state by exposure to x-ray light, and then into a further unstable excitation state by irradiation with activating

light, and being capable of decomposing from the unstable excitation state by radiating fluorescent light, the storage particles consisting of a transparent salt material comprising two chemically different salts that crystallize in the same crystal structure to form a mixed crystal,

- a transparent and crystal clear binding agent within which the storage particles are held, the binding agent and the storage particles together forming a storage layer,

wherein the binding agent and the storage particles have substantially the same refractive index, and are both isotropic.

37. (Currently amended) A method for producing a storage element for an x-ray image, the method comprising the steps of:

- selecting a binding agent having a refractive index,

- ~~selecting a~~ selecting a first salt and a second salt, which are chemically different but crystallize in the same crystal structure, the first salt having a refractive index lower than the refractive index of the binding agent, and the second salt having a refractive index higher than the refractive index of the binding agent,

- mixing the first and second salt together to form a mixed crystal having a refractive index, wherein the first and second salt are mixed together in a proportion such that the refractive index of the mixed crystal matches the refractive index of the binding agent,

wherein the binding agent and the storage particles have substantially the same refractive index, and are both isotropic.

38. (Previously presented)A method for producing a storage element for an x-ray image, the method comprising the steps of:

- preparing a binding agent in a highly liquid state by heating the binding agent, the binding agent comprising a transparent and crystal clear material,

- dispersing storage particles in the liquid binding agent, the storage particles being capable excitation to a metastable excitation state by exposure to x-ray light, and then into a further unstable excitation state by irradiation with activating light, and being capable of decomposing from the unstable excitation state by radiating fluorescent light, the storage particles consisting of a transparent salt material comprising two chemically different salts that crystallize in the same crystal structure to form a mixed crystal,

- wherein the binding agent and the storage particles have refractive indices that are substantially the same, and are isotropic,

the method further comprising the steps of:

- dispersing the liquid binding agent and dispersed storage particles into a thin film-type layer, and

- curing the binding agent to form the storage element.

39. (New) Flat storage element for an X-ray image,

- with a large number of storage particles which may be placed by means of X-ray light in metastable excitation states that are convertible by irradiation with activating light

into an unstable excitation state which is in turn decomposed with the radiation of fluorescent light, and

- with a transparent binding agent by means of which the storage particles are held together to form a storage layer,

- wherein the binding agent and the storage particles have substantially the same refractive index, are crystal clear, and are optically isotropic,

- wherein the storage particles consist of a transparent salt material which comprises two salts chemically different but crystallizing in the same crystal structure,

- wherein the salts form a mixed crystal, and

- wherein the crystal clear binding agent is chosen from the group consisting of EIFE, MF resin, EP resin, crowns, flints, rigid PVC, PS, SAN, PMMA, PA6, PA66, PA11, PA12, and PC.

40. (New) Storage element according to claim 39, wherein the salts differ in at least one of their cations and anions.

41. (New) Storage element according to claim 40, wherein the cations are halide ions.

42. (New) Storage element according to claim 39, wherein the binding agent is a transparent plastics material with a refractive index of between 1.4 and about 1.6.

43. (New) Storage element according to claim 39, further comprising an anti-reflection coating borne by the front surface of the storage layer.

44. (New) Storage element according to claim 39, wherein the rear side of the storage layer bears an absorbing layer which absorbs the activating light.

45. (New) Storage element according to claim 39, wherein a reflecting layer is provided on the rear side of the storage layer, which reflects the fluorescent light and is connected firmly to the storage layer.

46. (New) Storage element according to claim 39, wherein a protective layer of material absorbing X-ray beams is arranged behind the storage layer, the protective layer comprising a metal layer consisting of a metal with high order number such as lead.

47. (New) Storage element according to claim 46, wherein the protective layer is connected firmly to the storage layer by an adhesive layer that absorbs the activating light.

48. (New) Storage element according to claim 39, wherein at least one of the storage layer, the anti-reflection coating, the absorbing layer, the reflecting layer, and the protective layer form a bendable layered structure.

49. (New) Flat storage element for an X-ray image,

- with a large number of storage particles which may be placed by means of X-

light in metastable excitation states that are convertible by irradiation with activating light into an unstable excitation state which is in turn decomposed with the radiation of fluorescent light, and

- with a transparent binding agent by means of which the storage particles are held together to form a storage layer,

- wherein the binding agent and the storage particles have substantially the same refractive index, are crystal clear, and are optically isotropic,

- wherein the storage particles consist of a transparent salt material which comprises two salts chemically different but crystallizing in the same crystal structure,

- wherein the salts form a mixed crystal, wherein the crystal clear binding agent is chosen from the group consisting of EIFE, MF resin, EP resin, crowns, flints, rigid PVC, PS, SAN, PMMA, PA6, PA66, PA11, PA12, and PC and

- wherein the salts chemically different material are formed by different alkali halides.

50. (New) Storage element according to claim 49, wherein the salts differ in at least one of their cations and anions.

51. (New) Storage element according to claim 50, wherein the cations are halide ions.

52. (New) Storage element according to claim 49, wherein the binding agent is a transparent plastics material with a refractive index of between 1.4 and about 1.6.

53. (New) Storage element according to claim 49, further comprising an anti-reflection coating borne by the front surface of the storage layer.

54. (New) Storage element according to claim 49, wherein the rear side of the storage layer bears an absorbing layer which absorbs the activating light.

55. (New) Storage element according to claim 49, wherein a reflecting layer is provided on the rear side of the storage layer, which reflects the fluorescent light and is connected firmly to the storage layer.

56. (New) Storage element according to claim 49, wherein a protective layer of material absorbing X-ray beams is arranged behind the storage layer, the protective layer comprising a metal layer consisting of a metal with high order number such as lead.

57. (New) Storage element according to claim 56, wherein the protective layer is connected firmly to the storage layer by an adhesive layer that absorbs the activating light.

58. (New) Storage element according to claim 49, wherein at least one of the storage layer, the anti-reflection coating, the absorbing layer, the reflecting layer, and the protective layer form a bendable layered structure.